FAA | AVIATION NEWS

NOVEMBER 1964

FEDERAL AVIATION AGENCY

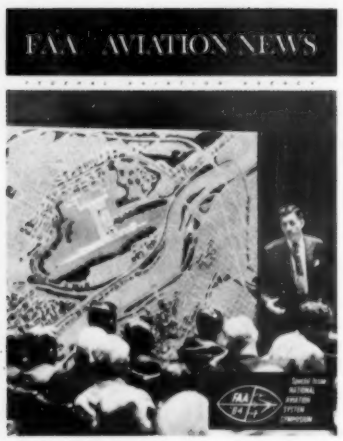
Special Issue:
NATIONAL AVIATION SYSTEM SYMPOSIUM

FAA | AVIATION NEWS

F E D E R A L A V I A T I O N A G E N C Y

VOL. 3, NO. 7 NOVEMBER 1964

COVER



Administrator N. E. Halaby explains the airport exhibit to some 150 aviation leaders at the first NAS Symposium.

Pages 3-11.

FAA AVIATION NEWS is published monthly by the Office of Information Services, Federal Aviation Agency, Washington, D.C., 20553, in the interest of aviation safety and to acquaint readers with the policies and programs of the Agency. The use of funds for printing **FAA AVIATION NEWS** was approved by the Director of the Bureau of the Budget, Feb. 1, 1963.

Subscription rates: U.S. $1.50 a year, foreign $2.00 a year, single copies 15 cents. Send check or money order (no stamps) as well as address changes to Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402.

In requesting a change of address, subscribers should include the mailing label from any issue to facilitate the change.

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FAA Administrator N. E. Halaby and Deputy Administrator Lt. Gen. Harold W. Grant at the opening session of the first NAS Symposium.

Airspace Shareholders Evaluate Present, Future

The most outstanding group of aviation executives ever assembled attended the FAA National Aviation System Symposium in Washington, D. C., Sept. 30-Oct. 1.

Representing virtually all elements of the aviation industry, the group of about 150 included presidents and other top executives from the airlines, manufacturing companies, associations and unions. NASA Administrator James E. Webb, Under Secretary of Commerce Clarence D. Martin, Jr., and seven Air Force and Army generals were among those who represented the Government.

Informally termed the "shareholder's meeting" to emphasize the many divergent elements that have a share in the airspace, the two-day session was chaired by FAA Administrator N. E. Halaby.

A dozen FAA officials participated from the stage and the sessions were conducted in "town hall" style to encourage discussion from the floor by the blue ribbon audience.

In the concluding session, J. B. Hartranft, president of the Aircraft Owners and Pilots Association, expressed appreciation to Mr. Halaby "for giving this opportunity not only of exposure to the Agency, but also one segment of industry to another.

"I know I have learned a great deal," Mr. Hartranft con-

FAA '64

NATIONAL AVIATION SYSTEM SYMPOSIUM

An Aerospace Industries Association spokesman, Joseph T. Geuting, Jr., left, joins the floor discussion at the shareholders' meeting.

William Lawton speaks for the National Business Aircraft Association.

AOPA President J. B. Hartranft: "I . . . hope that it will happen again."

The figures cover 95 per cent of the accident reports for piston aircraft, including rotocraft, for fiscal year 1964.

tinued, "not only from what has taken place on the podium here, but in the discussions with other segments."

The AOPA president commended the Administrator "for bringing us together in this manner" and expressed the hope that it will "happen again."

The format of the FAA meeting was designed to cover the entire National Aviation System—to discuss the system on the first day of the symposium as it now exists, and on the second day as it is envisioned for tomorrow.

Questions from the guests covered a myriad of subjects, ranging from accident statistics to the supersonic transport.

Considerable interest was shown in development of subsonic aircraft, particularly helicopters, V/STOLs and the short haul transport. Donald W. Douglas, president of the Douglas Aircraft Co., summarized the economic difficulties of producing a suitable plane for the short haul market.

Mr. Halaby compared FAA's search for a short haul transport with that of the little boy opening the presents he found under the tree on Christmas morning: "There's got to be a pony here somewhere."

The problems and possibilities of helicopter and V/STOL development, even for city-center to city-center transportation, were reviewed by spokesmen with various points of view, including the new director of NASA's Aeronautics Division, Office of Advanced Research and Technology, Charles W. Harper, and Charles H. Kaman, president of Kaman Aircraft Corp.

The audience was shown interior and exterior movies of the two FAA crash tests of airliners in Arizona and fire tests at FAA's National Aviation Facilities Experimental Center (NAFEC) in Atlantic City. George P. Bates, Jr., acting director of the FAA Aircraft Development Service, summarized the preliminary lessons learned, including the fact that the helicopter was not regarded as successful for fire fighting in the NAFEC tests.

A number of the participants in the symposium expressed pleasure in experiencing—some for the first time—what the

FAA's George P. Bates discusses the development of subsonic aircraft.

Center Chief Chester Watson participated in the television presentation.

Administrator characterized as "a 360 degree view of our industry."

One of the highlights of what may become an annual symposium was a closed circuit TV tour of the operation of the Washington Air Route Traffic Control Center at Leesburg, Va. Conducted by Oscar Bakke, director of the FAA Eastern Region, and Chester Watson, chief of the Center, the live presentation gave the audience an opportunity to observe the Center in action. The audience had a chance to see what appears on a controller's scope today and then, by use of a motion picture, had a preview of the newest air traffic control development—alphanumerics, which puts an aircraft's identification number and altitude on the scope.

A film presentation of a simulated flight at Atlantic City also demonstrated what an SST flight would look like at cruise speed moving across a scope.

Gordon M. Bain, Deputy Administrator for Supersonic Transport Development, reported on the SST program. A second round of government-airline evaluation of manufacturers' proposed SST designs begins in November.

Performance objectives for the United States SST, Mr. Bain noted, call for a safe and economical airplane that can operate at maximum gross weight from airports now accommodating large jet liners, generates noise levels no greater than current civil jets and sonic boom at "minimum" levels, and does not require "extensive and costly new service and shop equipment."

On the problem of sonic boom, he observed that "there are no verified answers or solutions at the present time," but "problems seemingly as difficult have been met in the past."

Mr. Halaby announced at the meeting that minimum landing standards for large air transports are being lowered. Participating airports will have to have suitable facilities and participating airlines must meet certain rigorous conditions.

The accident record of both general aviation and the airlines was considered, along with possible projections as the population continues to increase.

Mr. Halaby discussed the tremendous population growth that has been forecast and he coupled this thought with the increased standard of living for most Americans—higher income and more leisure hours. Calling this "a great opportunity" for aviation, Mr. Halaby stressed the fact that flight activity is likely to increase by 40 per cent by 1975.

"We must redeclare war on death, diversion and delay," Mr. Halaby said as he looked ahead to what must be done to accommodate the new planes and pilots that will take to the airways by 1975.

Federal Air Surgeon Dr. M. S. White discussed the human factors in aviation, including minimum physical standards, fitting the pilot into the cockpit, environment and stress factors, crop dusting problems and the fact that alcohol has greater effect on a pilot than a motorist. *(See page 18.)*

One session was devoted to general aviation subjects. Assistant Administrator William J. Schulte, of the Office of General Aviation Affairs, and Associate Administrator David D. Thomas, Associate Administrator for Programs, conducted the general aviation session which included a thorough presentation of the development of the flight service station program, including the fact that many more areas will be served and less money will be spent.

Mr. Schulte also announced that a new *Airman's Information Manual* is being developed to replace both the *Flight Information Manual* and the *Airman's Guide*.

Other FAA officials who participated were R. J. Shank, Associate Administrator for Development; Nathaniel H. Goodrich, General Counsel, and G. Ward Hobbs, Director of the Bureau of National Capital Airports.

Scores of the nation's aviation leaders responded to Mr. Halaby's invitation to submit a frank critique on the symposium. The Administrator was particularly pleased that many went beyond the questionnaire that had been distributed by writing detailed letters urging that the symposium be made an annual event and suggesting methods of improving future meetings.

FAA ADMINISTRATOR

NATIONAL AVIATION SYSTEM SYMPOSIUM

FAA Administrator N. E. Halaby envisioned "Aviation in 1975" at the NAS Symposium. The prepared text follows:

During the past six months, we in the FAA have been involved in what I consider to be one of our most important projects—articulating the policies and goals which will guide the Agency through 1975. In these aviation goals, we are trying to achieve a balance between the nation's needs and the nation's capability for meeting those needs. We are also developing a long-range planning process to help insure that we achieve our goals.

This means that we shall have a document which sets out in comprehensive form the policies which guide the FAA in the accomplishment of its missions and its relationships with you, its shareholders of the airspace. Not only will such a policy statement serve as a guide in decision making and help insure consistency within the Agency, but it will provide those with whom the FAA deals a better understanding of the philosophy behind our actions and our regulations.

Such an understanding is particularly significant for a regulatory agency such as the FAA, which must achieve compliance with its regulations by primary reliance upon a force of enlightened self-interest and a sense of public responsibility and by secondary reliance upon an enforcement program which is fair, fast, consistent and effective.

It is equally important that you, the Shareholders, be aware of the goals the Agency is seeking to achieve. These goals will determine the programs we undertake and, in turn, will determine both the kind of service and the level of service which we offer the public and the aviation community.

We are proud of the fact that the United States is the world leader in aviation—that aircraft of U.S. manufacture set the standards of safety, reliability and economy throughout the world; that American-made avionics equipment is unsurpassed; that we have a domestic and international air transportation system second to none in the world; that our system of air traffic control and navigation is unequalled; and most important of all that the air traveler on U. S. air carriers is the safest air traveler in the world.

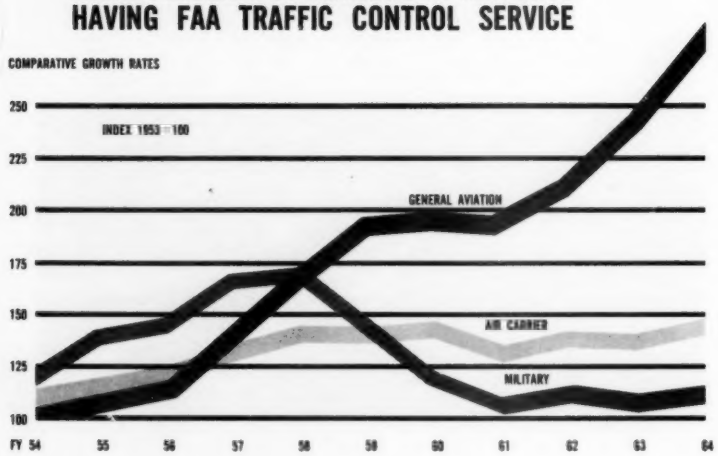
Leadership Must Be Maintained

Our position of leadership is the product of dedication and hard work on the part of people like you. We, in the FAA, intend to do everything we can to guarantee that the U.S. remains the world leader.

Our policies and our goals must recognize this responsibility.

In setting our goals, it has been necessary to identify the most important problems we will be facing in the future. Undoubtedly, the most serious problem confronting the world for the remainder of this century, aside from maintaining world peace, is the population explosion. The present world population is 3.2 billion. In ten years it will be over 4 billion, and by the year 2000 there will be 7 billion. The U.S. will feel the press of population growth, but to a somewhat lesser extent than the rest of the world.

TOTAL AIRCRAFT OPERATIONS AT AIRPORTS HAVING FAA TRAFFIC CONTROL SERVICE



FORESEES DECADE OF GROWTH

The two other most serious problems confronting the U.S. in the years ahead are automation and the existence of the industrial-military complex.

Automation will increase productivity immeasurably, making many things possible which had heretofore been beyond the realm of man's capability and even his imagination, and remove the drudgery and the time-consuming human effort required to perform many necessary tasks. At the same time, automation poses a serious threat to our society unless we are able to make the necessary changes in our social, economic and political institutions to cope with the fact of man's changing role in his society. As a nation, we must demonstrate the wisdom and the imagination necessary to utilize the benefits of automation without becoming engulfed in a sea of unemployment.

Military-Industrial Complex

The requirements of national security have led to the development of a system which draws to it the best of the nation's research talent as well as the best of its managerial capabilities. The demands of wars and cold wars, the tremendous quantities of money involved in military programs, the magnitude of our efforts in space all have combined to produce a military-industrial complex whose growth and direction have been determined not by market forces, but by demands of national defense and national prestige. This has led to an increasing dependence of the civilian sector of our economy on the technological fall-out of military and space programs. In many cases, the result has been a far different allocation of resources than would otherwise have taken place with much more rapid rates of growth and development in those sectors of the civilian economy which have been able to utilize directly or indirectly the benefits of our vast defense expenditures.

In the coming years there will be a strong temptation to use more and more governmental actions to insure the rapid introduction of technological advances. Clearly, there is an important role for Government in research and development, and of course, we must find ways to make the benefits of technology available rapidly. However, we must be very stringent in our demands that there be ample justification for any departure from the normal market mechanism. We must be sure that governmental activity is confined to those areas where there is not an adequate private substitute.

These problems—the population explosion, automation and the existence of the industrial-military complex—will be with us for the indefinite future. Certainly the first two can be expected to become progressively more serious. A failure to cope with any one of the three adequately may well prove disastrous.

Aviation is closely related to each of these problems. Each of the three will increase the demands which are already being made on the aviation industry but at the same time, the proper use of aviation technology can contribute significantly to our ability to meet the challenges ahead. . . .

Innovations in aerodynamics, improved propulsion systems and fuel properties and the development of new metals and other materials will produce performance characteristics and operating economies which will allow aviation solutions to entire ranges or problems where aviation has never been a factor before.

The implications of advanced aviation technology are vitally important to the less-developed countries of the world. Air transportation can, in effect, solve problems of mountain ranges, impenetrable jungles, deserts and unbridgeable river complexes. We have already seen examples of this in Latin America, Asia and the Near East.

But the less-developed countries are by no means the only ones that stand to benefit from the coming revolution in aviation technology. In the U.S., for example, it may well be that the only possible solution to the urban transportation problems will be an aviation solution. There will be great strides in normal intercity operations and in city-center to city-center air transport.

Automation will provide greater reliability at lower cost in many aspects of aviation. Advanced navigation equipment, all-weather landing systems, and better aircraft themselves are just a few illustrations of the benefits we can expect.

Automation will also mean more free time for larger numbers of people. The availability of safe, low-cost air transportation will broaden the choices available to the population in general and allow them to make more profitable and more enjoyable use of their leisure. Aviation will also make a wider range of products available in markets throughout the world at greatly reduced prices, improving the choices available to the individual in his role as a consumer. Just as the emerging nations will need expanded markets for their products, the developed countries will have to find markets for their greater productive capacity generated by automation.

If we are to solve the problems of the future and use our knowledge to improve the lot of mankind, we cannot approach them with what Kingman Brewster, the President of Yale, has characterized as "the needlepoint mentality of a bond house lawyer." We must approach them boldly—with imagination —with enthusiasm—and with a deep and sincere feeling for the human values involved.

City Populations Will Soar

In more specific terms, we must consider the general economic environment in the U.S. and the population problem in terms of size, distribution and the important sociological factors. Looking at the U.S., we see a population of 226 million by 1975. The steady trend toward urbanization will continue and by 1975 over 75 per cent of our people will live in urban areas. There will be 30 metropolitan areas with a population of one million or more. . . .

The Gross National Product will increase from $600 billion to well over $900 billion by 1975. Increased productivity will mean higher family incomes and a generally rising standard of living. . . .

In the light of this, we must consider what the needs of air transportation will be in the decade ahead and what should be the role of the aviation community in meeting these needs.

It is immediately obvious that an increased number of vehicles, diversified in type and in deployment, will be needed to solve our air transportation problem. The nation must look first to its aviation industry to see that new technology is used in supplying vehicles matched to our changing requirements. The FAA must have a thorough understanding of the nation's air transport problems in light of our total transportation system. In those cases where private industry alone is unwilling or unable to use the technology to produce the needed vehicles, the Government must be prepared to act—but only to the extent necessary to see that the nation's requirements are met. In speaking of vehicles, I refer to the entire spectrum, from SST's to V/STOL's and, I include both general aviation and the air carriers.

In our developing complex of urban communities, new air vehicles will not serve to provide effective air transportation without an appropriate system of airports. The FAA is developing a national plan for a system of airports to meet these future needs. The problem of access to these airports from the communities they serve will depend on better solutions to urban ground transportation problems. It is an established fact that the technology of air transportation is far more advanced than the technology of other modes. While all of us in aviation should be proud of our progress, we cannot afford to sit back and watch the effectiveness of our air transportation system being strangled by inadequate airport access.

We can anticipate at least a 40 per cent increase in flight activity by 1975. To support this increase in traffic with its new vehicles and its system of airports, we must have a National Airspace System to move the vehicles safely and efficiently.

Major Automation Program To Begin

As of today we have introduced only a small amount of automation into a system that remains basically manual. Now we are at the threshold of a major program to automate our air route traffic control centers. Before 1975, we expect to see automation not only of the entire en route system but also of all significant terminal areas. This will include automatic processing and distribution of flight plans, automatic radar and radar beacon tracking, the automatic association of these tracks with flight plans and automatic coordination of flight information by the controllers within a facility and between facilities.

The aviation weather subsystem will be developed to a point where it can truly meet the needs of all aviation users and will be fully automated. Terminal area operations will benefit significantly from complete all-weather landing, and airport capacity will be increased through automated sequencing and control of each aircraft.

Through these applications, we can expect significant improvement in safety along with greater dependability in air transportation.

The future of our air transportation depends upon the combined efforts of all the aviation shareholders. I would like to discuss some aviation goals which can be achieved only by the support and impetus of the entire aviation community.

U. S. Aviation Products Sold Abroad

It is in the national interest to see the products of our entire aviation industry sold to the other nations of the world. But we are not interested in just selling hardware. Our responsibility as a world leader, our national prestige, and indeed our national security require us to promote the use of our concepts, techniques and procedures of managing an airspace and an airport system. While there has been some progress toward this goal in the past, I do not feel that the U.S. is as far along this path as our changing world requires.

In my opinion our most important domestic goal is the establishment of a truly effective air transportation system. In terms that the traveling public can understand, this means the connection of any two population centers within the U.S. by a door-to-door travel time of not more than eight hours. Obviously, such a system will require the dedicated efforts not only of the entire aviation community but also of those who are developing an integrated ground transportation system.

Finally, there is an over-riding goal which must be uppermost in the minds of everyone. None of the accomplishments I have already discussed will be possible if they are not accompanied by improvements in air safety and, here, primary reliance must be on the aviation community itself. The greatest strides in aviation safety will always be the result of voluntary actions on the part of manufacturers, carriers, pilots and mechanics and airport operators. The Government's role must be one of guiding, assisting and monitoring. Only in the last analysis should it take direct enforcement actions. Only through an acceptance of this responsibility by all members of the aviation community will we be able to achieve and maintain the level of safety which the public has every right to expect from aviation.

It is important that we all understand where aviation is going in the future. But understanding alone is not enough. No one segment of the aviation community, neither in the Government or in the private sector, has the resources, the capability or the authority to achieve these goals unaided. It is only through the combined and concerted efforts of all shareholders that our goals for air transportation will be realized in the decade ahead.

Supersonic transport plays major role in aviation planning for the next decade. Proposed designs for the SST were submitted early this year for evaluation in initial design competition among manufacturers. Boeing model is at left, Lockheed proposal at right. Further design evaluation is now under way.

AVIATION FACES MANPOWER SHORTAGES

Manpower Committee chairman Dan Kimball, right, and member Lou Davis meet with the press following the first day of the FAA shareholders meeting.

As modern aviation technology achieves frequent advances in many different areas, the careful projection of the industry's growing requirement for highly skilled technicians, mechanics and pilots takes on a new importance. Every advance will increase this requirement, and each new aircraft will demand greater degrees of high skill training and technological knowledge. This training, based on realistic estimates, must begin long before the actual job openings occur, for crash training programs in which supply first lags and then surpasses need, are wasteful, uneconomical and unacceptable.

These are the findings of "Project Long Look," a study by the Aviation Human Resources Study Board. They point to deficiencies in career planning and manpower training that may impede the nation's expanding $7 billion civil aviation industry, according to FAA Administrator N. E. Halaby.

The report was made at the National Aviation System Symposium in Washington, D. C. *(pages 3-5)* by its chairman, Dan A. Kimball, former Secretary of the Navy.

The board was created by the FAA Administrator in February to analyze the current manpower resources in military, commercial and general aviation, and to make recommendations to keep manpower capability and resources abreast of anticipated growth of the civil aviation community. To achieve this aim, members of the board collected the recommendations of leaders in the aerospace industry, civil air transport, general aviation, government, labor, business, military and economics.

From all indications, the report stated, manpower planning must be accorded a priority equal to that of the technical and financial sectors of the industry. For as the industry becomes increasingly complex and technical, the development of individual skills and capabilities becomes a long-term project. If current trends persist unchecked, serious manpower shortages are anticipated. In the next 10-15 years, there will be a substantial increase in the annual losses of air carrier flight officer personnel due to retirement, disability and promotion to nonflying executive positions.

The problem is intensified by the fact that many additional flight officers and mechanics will be required to keep pace with the industry's expected growth during this period. These increases will be steady, the report stresses, and the industry must make long-term plans to fill personnel requirements.

During the past decade, demand for additional flight officers brought about by traffic increases has been kept in check by technological changes—larger, faster aircraft and changes in the use of manpower. But the introduction of new short-haul aircraft and the supersonic transport will greatly expand the requirements for flight officers and ground service personnel.

The board believes that previously published approximations of the number of aircraft required by the scheduled airline fleet in the next 10-15 years are considerably underestimated.

Commercial air carriers have historically relied heavily on military-trained pilots. To a lesser but still significant extent, they still do so today. In recent years, the number of pilots trained by the military has remained fairly constant, but as additional military reliance is placed on unmanned missiles, a shrinkage in pilot training may occur.

In regard to current civilian training, the board discovered that a considerable decline in enrollment has occurred in public and private aviation training institutions. As a result, fewer young people become exposed to the possibilities of a career in aviation.

While there is no shortage of mechanics being trained and released by the military, these men are for the most part trained in only one speciality skill. They require considerable retraining to qualify for an FAA A&P certificate which makes them eligible for civil aviation mechanic employment. The board also found that the more intricate the nature of the repair work becomes, the more it tends, in the interest of efficiency and economy, to be concentrated in a few areas. Efforts are needed to attract competent mechanics to these areas.

While the absolute number of pilots has tended to increase gradually, the increases are in upper age brackets. This group consists primarily of established businesmen committed to nonaviation careers who are disinterested or too old to meet the training qualifications for employment as airline flight officers or professional pilots.

The report stressed the fact that the continuous growth of all segments of aviation depends upon a steady flow of young flight officers and service personnel through the training pipeline. Industry must be cognizant of its long term needs, and must take positive steps to insure that talented young people are attracted into careers in aviation.

In addition to Chairman Kimball, the board included D. R. Petty, senior vice president, flight operations, United Air Lines; Lou Davis, general aviation consultant and writer; Gen. Emmet "Rosy" O'Donnell (USAF, Ret.), Louis Marx Co., New York; Virgil M. Rogers, National Education Association; A. J. Hayes, president of the International Association of Machinists; Admiral Robert B. Pirie (USN, Ret.), special advisor to the chairman, and Chester C. Spurgeon, FAA, executive secretary of the group.

NATIONAL AVIATION SYSTEM SYMPOSIUM

Left, Robert E. Moore, FAA, reviews FAA's *Private Pilot Handbook* with C. A. Beane, M & M Associates. Above, Maj. Gen. Joseph D. Caldera, president, Flight Safety Foundation, and Edward I. Williams, Aero Commander, study a model of the National Aviation System. Right, exhibit in the FAA lobby. Below, "chow line" in the employee dining room.

Top: Miss Jean Ross Howard, Women's Advisory Committee on Aviation, greets military and civilian aviation leaders. Center: Charles Beard, Braniff International Airways, one of eight airline presidents in attendance. Bottom: A. Paul Vance, president, National Pilots Association, chats with William J. Schulte, FAA, Assistant Administrator, Office of General Aviation Affairs.

This is the eighth of a series of articles on aerial navigation.

Although flying from one landmark to another using pilotage navigation may seem adequate for the fair weather pilot, what happens if the weather should start closing in unexpectedly and he is unable to find his next checkpoint?

The answer to his problem is dead reckoning, or DR as it is frequently called.

Although it is not as accurate as one might like, DR is the only method by which a position can be determined at any time and is therefore considered the basic form of aerial navigation. Other methods of navigation, such as pilotage, radio and celestial provide the pilot with methods of correcting his DR.

By means of DR, a pilot can fly close to his landmarks. And since he knows approximately when and where to look for these checkpoints because he has estimated a DR position, he will be able to locate them easily. A pilot without DR training might miss these checkpoints altogether.

DR Used Under Adverse Conditions

Using DR, a pilot who has a fairly accurate knowledge of his own course and speed, with some knowledge of wind direction and velocity, is able to proceed even under adverse weather conditions with more certainty than an untrained pilot flying in fair weather.

Dead reckoning is the determination of position by advancing a known position along the estimated course and distance. Or, stated in another manner, DR is determining where an aircraft should be after determining where it has been.

The name "dead reckoning" evolved from the term "deduced reckoning" and was subsequently changed to "dead reckoning," or DR.

The main purpose of DR is knowing the aircraft position at all times. In addition, it helps the pilot determine the direction to which he must turn to reach any given point and the estimated time of arrival (ETA) at the destination or a particular landmark.

DR navigation is dependent upon three factors:

1—The information supplied by the flight instruments, namely, the airspeed, the altitude, compass heading and free air temperature.

2—The forecast and actual winds (speed and direction).

3—Past performance and past position plots.

Like any other form of navigation, a safe flight is largely dependent upon a carefully planned preflight plan. The nature of dead reckoning requires more time in flight planning than does the fair weather flyer's pilotage navigation.

All types of navigation have several things in common: the need for chart preparation, checking the availability of airports and services in the *Airman's Guide*, studying weather reports, estimating the time of flight and filing a flight plan.

With DR, however, the pilot also needs to measure the true courses and determine magnetic variation from the charts, and determine the wind effect to calculate the compass headings and the times from one point to another.

The accuracy of DR is dependent upon the information obtained by the pilot from his observations and from available data.

To minimize the amount of actual DR in the cockpit, the pilot should do the major part of his flight planning on the ground, leaving most of his flight time for flying and for the corrections that may be necessary during flight.

Preliminary steps in preflight DR planning should include:

- Select aeronautical charts.
- Plot the course lines of flight.
- Study charts for prominent landmarks and flight hazards to determine direction of flight at the proper altitude according to VFR rules.
- Obtain weather data, including forecast winds.
- Record data on a pilot's planning sheet and Visual Flight Log.
- Determine true airspeed.
- Determine true heading, ground speed; magnetic and compass headings.
- Determine ETA's for each leg and for entire trip.
- Determine fuel consumption for the flight.
- File flight plan.
- Preflight yourself, the pilot, to determine physical and mental readiness for flight.
- Preflight aircraft.

Sectional Charts Ideal for Short Flights

Selection of charts should include the area of flight and such additional charts required which would permit landing at an alternate airport should an emergency develop. Sectional charts are ideally suited for most flights of short duration.

In plotting and measuring courses on the chart, a pilot should use a straight edge or plotter. If a plotter is not available to measure the course line, a protractor can be used.

While working on the charts, a pilot should note those landmarks which would serve as good checkpoints during the flight. Besides prominent landmarks, a study of the flight terrain should be studied to determine location of the high

peaks, danger areas, or any possible hazards along the intended flight path.

A pilot can also determine the proper altitude he is required to fly according to FARs when flying VFR under 29,000 feet. A sketch on the back of the sectional chart indicates the proper levels, including: odd thousand feet plus 500 feet when on a heading of 0° to 179° and an even thousand feet plus 500 feet when heading from 180° to 359°.

Weather Information Helps in Selecting Altitude

Weather data supplied directly by the Weather Bureau or from the flight service station will help the pilot select the most favorable altitude, where winds are most advantageous. If winds are too strong or weather is marginal, it is wiser to stay on the ground.

All information obtained during the preflight planning should be logged on a pilot's planning sheet and a visual flight log similar to the one reproduced in this article.

The steps in obtaining flight information include:

- True Course (TC) is the direction of the line connecting two desired points, drawn on the chart and measured clockwise in degrees from true north on the midmeridian.
- Wind Correction Angle (WCA) is determined from wind triangle. It is *added* to TC if the wind is from the right; *subtracted* if wind is from the left.
- True Heading (TH) is the direction in which the nose of the plane should point to make good the desired course.
- Variation (VAR) is obtained from the isogonic lines (shown as red dashes on a chart). To add or subtract variation remember: *East is least*, subtract; or *west is best*, add.
- Magnetic Heading (MH) is obtained by applying variation to the true heading.
- Deviation (DEV) is obtained from the deviation card found on the cockpit instrument panel. It is added or subtracted from the MH, as indicated on the card.
- Compass Heading (CH) is the reading on the compass after applying deviation to the MH. It is followed by the pilot to fly the desired course.

As an example, on a flight from A to B, with a measured true course of 260°, using a forecast wind of 215° at 20 mph and a TAS of 130 mph; and variation determined as 1° west (from chart) and deviation of +2°, a pilot would then complete the remaining portion of the pilot's DR planning sheet.

Pilot Makes Only Necessary Corrections

Using the detailed and carefully planned flight plan shown leaves the pilot free to make only necessary corrections during flight. The estimates that he has made relieve him from unnecessary DR computation in the cockpit, freeing his time for flying. The pilot can check his visual flight log, allowing a little lead time, in advance of each checkpoint before he starts looking for his next major checkpoint.

In the illustration below, the pilot would expect to be near his first town #1 at approximately 1013 if he takes off at 1000, as planned.

By working ahead, as is the case in DR navigation, the pilot can spend more time flying his aircraft and less time working on logs and charts.

PLANE IDENTIFICATION N123W — PILOT'S PLANNING SHEET — DATE Nov. 1, 1964

CRUISING AIRSPEED 130	TC	WIND MPH	WIND FROM	WCA R+ L−	TH	VAR W+ E−	MH	DEV	CH	TOTAL MILES	GS	TOTAL TIME	FUEL RATE	TOTAL FUEL
From: A														
To: B	260°	20	215°	−6	254	+1	255	+2	257	110	115	57½'	15	
From:														
To:														

VISUAL FLIGHT LOG

TIME OF DEPARTURE / POINT OF DEPARTURE	RADIO FREQUENCIES: TOWER / RANGE	DISTANCE: POINT TO POINT / CUMULATIVE	ELAPSED TIME: ESTIMATED / ACTUAL	CLOCK TIME: ESTIMATED / ACTUAL	GS: ESTIMATED / ACTUAL	CH: ESTIMATED / ACTUAL	REMARKS: BRACKETS, WEATHER, ETC.
"A"	239 / 1163			1000	115		
CHECKPOINTS 1. TOWN #1		25 / 25	0:13 /	1013 /	115 /	257 /	VSBY UNLIMITED WIND 215 @ 20 MPH at 4500 ft.
2. TOWN #2		30 / 55	0:15½ /	10:28½ /	115 /	257 /	
3. TOWN #3		28 / 83	0:15 /	1043½ /	115 /	257 /	FLIGHT PLAN FILED
4.		/	/	/	/	/	
5.		/	/	/	/	/	
DESTINATION 6. "B"	119.5 / 108.6	27 / 110	0:14 /	1057½ /	115 /	257 /	

UPDATED PILOT RATING REQUIREMENTS PROPOSED

New pilot rating requirements designed to improve pilot proficiency in virtually the entire range of civil aircraft have been proposed by the Federal Aviation Agency.

"What we are proposing," said George S. Moore, Director of FAA's Flight Standards Service, "are some common sense ways to cut down accidents due mainly to lack of pilot proficiency in, and familiarity with, small modern aircraft.

"Many pilots will recognize these proposals because they've been widely discussed and generally well-received at our Air Share meetings throughout the country. We warmly welcome any comments the aviation community would care to make."

The proposed rules would apply to pilots when serving as pilot-in-command of aircraft and to pilots when soloing in an aircraft for which they do not hold a rating.

A type rating would be required for the first time to operate a small jet plane. No type rating is required at present to fly small jets.

Type ratings also would be required for all operations in large aircraft. At present, type ratings to fly large aircraft are required when passengers are carried and when the flight is made for pay. The proposal would make a type rating mandatory for large aircraft when flying either solo or with passengers or crew, and whether or not the pilot conducts the flight for pay.

Also under the proposals, pilots would have to pass a flight check when they operate small (not over 12,500 lbs.) complex aircraft in which other persons are carried, or which are flown for compensation, or for which the pilot is paid. The flight check would be added to present requirements for a category and class rating. A certificated flight instructor or an FAA inspector would certify the flight check in the pilot's logbook.

A small "complex" aircraft is one defined as a small helicopter or turboprop airplane, or a small plane other than a turbojet that is equipped with retractable landing gear, flaps and controllable pitch propeller.

Pilots who have logged flight time in a particular type of small complex aircraft while holding an appropriate category and class rating before the proposed amendment would become effective would not need the flight check.

The flight check would consist of a demonstration similar to that given for an aircraft category or class rating. In the case of airplanes, it would also include the same instrument demonstration under the hood required of a private or commercial pilot applicant.

Under the proposed amendments, pilots would have to have aircraft category and class ratings if the aircraft carries any other person, is operated for pay or if the pilot is paid. This requirement now applies only when carrying passengers or operating aircraft for hire.

A further proposed amendment would require pilots to make familiarization flights before soloing a small aircraft of a category and class for which the pilot does not hold a rating. Under present rules, a pilot other than a student pilot can solo any category or class of aircraft without being type rated for that aircraft. The proposal would require the pilot to make at least three landings and takeoffs in an aircraft of the category and class to be soloed. The pilot would have to be the sole manipulator of the controls and be accompanied by a rated pilot in command.

Familiarization flight requirements would not apply to classes of aircraft soloed before the proposed amendment would become effective.

The proposed amendments are aimed especially at the growing complexity and specialized differences among today's high performance nonairline aircraft. The features of many of these aircraft are so refined that highly critical situations in the cockpit may quickly occur from improper handling.

In the case of small complex aircraft, the proposed flight check requirement is directed mainly at two accident areas: airplane structural failure through inability to control the plane under unexpected instrument conditions, and aircraft accidents caused by lack of knowledge of the aircraft system or performance.

The proposed rules do not change present flight experience requirements for pilot certificates and ratings. In this regard, the FAA plans to obtain the assistance of the aviation industry to consider the need for these proposed revisions to the pilot certification rules. Preliminary discussions toward this end have already been held.

The proposed requirements are contained in Notice 64-42, "Pilot Rating Requirements" (Reg. Docket No. 6204). Comments may be submited on or before Dec. 31, 1964 to FAA Dockets Section, 800 Independence Ave., S.W., Washington, D. C.

Agency's R. V. Reynolds Is Named Head of Hump Pilots Association

Veteran of 37 missions over the "hump" during World War II, Robert V. Reynolds, FAA's Deputy Assistant Administrator of General Aviation Affairs, was elected president of the Hump Pilots Association at its 18th Annual Convention held in Dayton, Ohio.

The organization is composed of pilots who "flew the hump" (across the Himalayan Mountains) during World War II, transporting supplies from India to China over the "Burma Road of the Air."

Reynolds, who served with the Army's Air Transport Command as a C-46 *Commando* transport pilot, was forced to bail out in February 1945 while flying near a 14,500 foot Himalayan peak, when both engines of his transport quit.

He has been with the FAA for the past 18 years.

Halaby Addresses Controllers

Arthur Godfrey and FAA Administrator N. E. Halaby chat at the head table of the Air Traffic Control Association's 9th annual meeting in Atlantic City last month. Mr. Halaby discussed the air traffic control system of the future, as well as efforts being made to provide an early retirement program for controllers. Mr. Godfrey served as toastmaster. Authentic flowered leis were distributed to all the guests.

STATE AND REGIONAL AVIATION MECHANIC SAFETY AWARDS ANNOUNCED

Fourteen regional and 32 state winners were named last month in the Second Annual Aviation Mechanic Safety Award Program established to recognize aviation mechanics making outstanding contributions to air safety by maintenance practices. The program is a coordinated effort by the FAA, the Flight Safety Foundation and the aviation community.

The awards were made for outstanding aviation safety contributions made by mechanics in both air carrier and general aviation categories.

Two national winners, one in each of the categories, will be named next month. They will be selected by a committee chosen by the Flight Safety Foundation.

Aviation mechanics from 30 states and Puerto Rico were state winners in the general aviation category. They will receive a permanently mounted commendation signed by the FAA Administrator and the regional director at presentation ceremonies.

Regional winners will receive an engraved plaque. Medallions will be presented to the two national winners in Washington next month. America Aviation Publications, Inc., will provide the trophies.

Regional awards were made in the five continental regions, in Alaska and in the Pacific.

Winners were selected on the basis of two main criteria: For suggesting a design or improvement to an aircraft, engine or aircraft component that will lead to increased reliability or safety in aircraft operation; for suggesting or developing a maintenance or inspection procedure that will contribute to greater safety.

Selections were made by state committees composed of state aviation directors and technical experts. Hundreds of entries were submitted during the competition from aviation mechanics engaged in private and business aviation activities.

The Aviation Mechanics Safety Awards program was established last year by Administrator N. E. Halaby.

The 1963 national winners were John Motta, Trans World Airlines, Los Angeles, and Norton G. Stubblefield, Morrison-Knudson Company, Boise, Idaho.

The 1964 regional winners are:

Eastern Region: *General Aviation*—Joseph B. Lucchese, White Plains, N. Y., employed by General Electric; *Air Carrier*—J. R. Schneider, Tulsa, Okla., American Airlines, Inc.

Central Region: *General Aviation*—Harold L. Williamson, Pawnee, Ill., Capitol Aviation, Inc.; *Air Carrier*—Joseph R. Brisebois, Brooklyn, N. Y., Trans World Airlines.

Southern Region: *General Aviation*—Herman Meinsen, St. Petersburg, Fla., Pinellas Aircraft, Inc.; *Air Carrier*—L. J. Jamgochian, Miami Springs, Fla., National Airlines, Inc.

Southwest Region: *General Aviation*—Harry A. Palmer, Midland, Tex., Champs Aviation Service; *Air Carrier*—Edward J. Lubojacky, Alvin, Tex., Trans-Texas Airways.

Western Region: *General Aviation*—Joseph S. Wischler, Scottsdale, Ariz., Phoenix Aviation Co.; *Air Carrier*—David C. Beagle, San Francisco, United Air Lines.

Alaskan Region: *General Aviation*—Wesley L. Stoddard, Anchorage, Stoddard Aero Service; *Air Carrier*—Robert T. Quninney, Juneau, Alaska, Coastal-Ellis Airlines.

Pacific Region: *General Aviation*—Robert Whittinghall, Honolulu, Honolulu Technical School; *Air Carrier*—Calvin K. H. Loo, Honolulu, Aloha Airlines.

State award winners were:

Alabama: James M. Nelson, Mobile; **Arizona:** Joseph S. Wischler, Scottsdale; **Arkansas:** William J. Stolzer, Little Rock; **Connecticut:** John Cirkot, Shelton; **Delaware:** Everett M. Smith and Paul J. Cartright, Wilmington; **Florida:** Herman Meinsen, St. Petersburg; **Georgia:** George H. Moore, Smyrna; **Illinois:** Harold L. Williamson, Pawnee; **Indiana:** Judson L. Lehman, Fort Wayne; **Iowa:** Robert L. Rinckley, Sergeant Bluff; **Kansas:** Mardoni B. Mitchell, Kansas City; **Massachusetts:** David Everest, Walpole; **Michigan:** Raymond F. Michael, Detroit; **Minnesota:** Norman O. Hansen, Rochester; **Mississippi:** Harold E. Aycock, Jackson; **Missouri:** Calvin A. Schultz, Berkeley; **Montana:** Wallace J. Patefield, Great Falls; **Nebraska:** Ralph W. Hawn, Papillion; **New Jersey:** Richard Brown, Millville; **New York:** Joseph B. Lucchese, White Plains; **North Carolina:** William F. Sharp, Greensboro; **North Dakota:** Gerhard Pietsch, Minot; **Ohio:** William F. Laufer, Jr., Troy; **Oklahoma:** Roger C. Fletcher, Tulsa; **South Carolina:** Jean N. Brannon, Greenville; **South Dakota:** Luvern A. Kraemer, Rapid City; **Texas:** Harry A. Palmer, Midland; **Vermont:** Frederic M. Greenwood, North Clarendon; **Virginia:** Williard M. Daugherty, Lynchburg; **Wisconsin:** G. Ward Laiten, Fond du Lac; and **Puerto Rico:** Antonio Sandin-Garcia, San Juan.

National winners will receive this medallion.

Controller at Greater Cincinnati Airport Talks Ailing Pilot to Safe Landing

Only moments after pilot Edward J. Peartree, of Rome, N. Y., took off in his Cessna from Greater Cincinnati Airport, the tempo of routine radio communications changed abruptly and excitement permeated the airways.

"How about radar back to the field!" his voice resounded. "Damn, I feel like I'm going to pass out!"

Without hesitation, FAA Controller Eugene V. Qualls, of Erlanger, Ky., working in the Cincinnati tower, had an airline abort a take-off already begun and vectored Peartree and his plane to a safe landing, using the airport's high intensity approach light to provide a helping hand.

From the frantic moment that Peartree's excited voice rang through the radio, it was only five minutes until the plane touched down on the runway.

After treatment at a local hospital, Peartree, an auto broker, returned to the tower to thank Qualls personally for his immediate assistance. Peartree resumed his flight the next day.

Qualls, a retired Air Force captain, spent several years as an Air Force tower and radar controller, before joining the Agency four years ago.

NEW NATIONAL AIRPORT PLAN RELEASED BY FAA

A new National Airport Plan recommending construction of 727 new landing facilities and improvements to 2,537 others at a total cost of $1.2 billion over the next five years has been issued by the FAA.

Of the new construction recommended, 579 airports are for general aviation use exclusively. The remaining airports are used by both general aviation and the airlines.

In submitting the new plan to Congress, FAA Administrator N. E. Halaby stated, "The role of the general aviation airport serving both metropolitan areas and small communities has become increasingly important. Recognition of this importance has been given in the preparation of this plan."

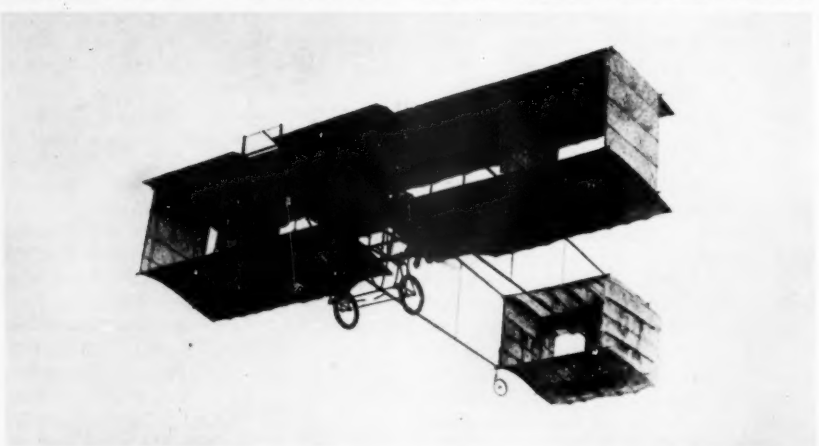
A total of 2,817 general aviation airports, 36 heliports, and nine seaplane bases are listed in the plan. An additional total of 996 locations used by both general aviation and the airlines are listed, including 803 airports, 116 heliports and 77 seaplane bases.

Total cost of the new construction is estimated at $268.9 million over the five year period. Improvements are estimated at $960.5 million.

The National Airport Plan does not commit Federal funds. It serves only as a blueprint for needed airport development to meet the continuous growth and demands of the national economy.

Inclusion of a facility in the plan is the first step toward eligibility for Federal grants under the Federal-aid Airport Program, but does not assure such funds. However, no airport can be considered for Federal assistance if it is not listed in the plan.

MILESTONES IN AVIATION



Influenced by the works of Alberto Santos-Dumont who was credited with the first powered flight in Europe, the Voisin brothers, Gabriel and Charles, became the first important designers and builders of airplanes in Europe. Their aircraft factory, set up in 1905-06 in Billancourt, France, was one of the first commercial factories in the world. It supplied such noted pioneers as Bleriot, Farman and others with gliders, biplanes and triplanes.

After building two biplane float gliders for Archdeacon and Bleriot in 1905, the Voisins built three important powered biplanes in 1907. Similar, but not identical, they included the Delagrange-Voisin which was the true ancestor of all powered European biplanes thereafter.

As a result of their aircraft productions, the Voisins standardized a type of powered airplane—the Voisin Standard 1909 type—which was to persist until the first World War. The aircraft above was a stable pusher biplane with forward elevator and tail-unit containing the rudder. It was considered one of the four most important European machines produced in that era. *(Smithsonian Institution photo.)*

Amateur Aircraft Builders Are Cautioned on Advertised Kits

Amateur aircraft builders are cautioned by the FAA against buying nationally-advertised kits and components for rotorcraft-gliders, gyroplanes, helicopters and other aircraft from mail-order catalogs without first determining their suitability for use in constructing an aircraft that would meet FAA safety standards.

When constructed according to FAA regulations, amateur-built aircraft may qualify for airworthiness certification in the experimental class. Recently, however, with the increasing popularity of such projects, some advertising has appeared which may mislead kit buyers.

Amateur builders are advised to read carefully the data on the kit they contemplate buying and compare the information with FAA provisions as outlined in current circulars. Certain components may be purchased on the open market, such as engines, propellers, rotor blades and hubs, wheel and brake assemblies, tubing, etc. But an aircraft that is completely assembled from prefabricated parts obtained commercially or from other persons is not considered by the FAA as being within the meaning of amateur construction. Therefore, it would not be eligible for FAA certification. To receive an experimental airworthiness certificate, the builder of the amateur aircraft must show the FAA satisfactory evidence that the project is truly amateur—designed or fabricated for educational or recreational purposes, on a nonbusiness, nonprofit basis.

Prospective buyers of prefabricated kits are advised to consult the nearest FAA General Aviation District Office before they buy such kits to save themselves possible difficulties later and to prevent unintentional violation.

SEMINAR HELD ON WEATHER

Flight and weather topics were discussed during a two-day FAA and Weather Bureau seminar and "Air Roundup" held for pilots last month in Red Bluff, Calif.

FAA experts from the Western Region headquarters led seminars in air traffic, law, medicine and navaids, while Weather Bureau specialists provided pilots with a thorough briefing on aviation weather.

Attracting many pilots, the event also included an air show which featured stunt flying, sky diving and a borate bombing demonstration.

AGRICULTURAL AIRCRAFT RULES UNDERGO STUDY

Rules governing the safety of agricultural aircraft operations are being considered by the FAA following public hearings early this month at Oklahoma City and written comments from the aviation community.

At present, there are no Federal rules specifically applicable to agricultural aircraft operations. Such operations are governed by an FAA Certificate of Waiver which authorizes the operator to deviate from existing air traffic rules when conducting aerial spraying.

With approximately 2,500 operators and over 5,000 aircraft now engaged in these increasing activities, FAA has proposed rules to assist operators in conducting their activities safely and efficiently.

Under the proposed rules, operators and pilots would be required to pass tests of their knowledge of agricultural materials and chemicals, including poisons, and competence in dispensing them. In addition, operators would be required to give proof of the airworthiness of their aircraft, and pilots would have to demonstrate safe operational techniques.

Two new FAA certificates would be issued, one for private and the other for commercial agricultural aircraft operator. Applicants for the private operator certificate would be required to hold a U. S. private, commercial or airline transport rating certificate and also a rating for the aircraft to be used. The commercial applicant would be required to have the services of at least one pilot holding a current commercial or airline transport pilot certificate and a rating for the aircraft to be used. The applicant himself may be the pilot.

Both private and commercial operators would be required to own at least one certificated, airworthy aircraft specifically equipped for agricultural operation, including shoulder harnesses for the pilot and, if applicable, the co-pilot. If the applicant is not the owner of the aircraft, the aircraft would have to be under exclusive lease to him for at least six consecutive months.

Knowledge and skill tests would be waived if the applicant held a current operating waiver at the time he applied.

1,500 Missions Flown in SARDA Emergency Exercise

"Casualties" arrive at the Civil Air Patrol Long Island Group Headquarters for emergency attention during the SARDA exercise, last month. A CAP cadet, right, checks for radiological contamination.

More than 1,500 missions were flown last month in the FAA's Eastern and Southern Regions in a weekend exercise designed to show the airlift capacity of general aviation in a national emergency.

Termed SARDA—State and Regional Defense Airlift—the exercise was handicapped by wind, turbulence and bad weather, particularly in the Southern Region which had to cope with Hurricane Hilda. Nevertheless, pilots in the South flew 500 missions carrying almost 500 persons representing doctors, nurses and evacuees, plus 21,000 pounds of simulated cargo, blood plasma, surgical instruments and food.

Twenty-two states participated in the exercise—15 in the Eastern Region and seven in the Southern.

In addition to FAA, other organizations participating with the states were the Office of Civil Defense, Civil Air Patrol, Weather Bureau and various general aviation groups.

Jacksonville ARTCC Will Be First To Receive Semi-Auto Equipment

The first operational semi-automated air traffic control system will be installed in the Jacksonville Air Route Traffic Control Center in Florida, according to N. E. Halaby, FAA Administrator.

"Jacksonville will be the first center to receive hardware developed by the Agency as a follow-on to the Project Beacon study which recommended evolutionary construction of an air traffic control system capable of handling demands of the supersonic era," Mr. Halaby stated. "Experience gained at Jacksonville will determine the best methods for including automation of this magnitude into other FAA operating facilities and will provide information as to the best use to be made of the system through refinements in operating procedures."

Contracts totaling $7.2 million for three components of the total system have been awarded. Installation of the equipment will begin in 1965. The system is scheduled to be fully operational by mid-1967.

International Business Machines Corporation of Rockville, Md., was awarded a $2.9 million contract for a central computer complex. Burroughs Corporation of Paoli, Pa., will provide common civil-military digitizers (CD) under a $2.6 million award. Raytheon Company of North Dighton, Mass., will provide radar bright display equipment (RBDE) under a $1.7 million contract.

The IBM central computer complex—IBM Model 9020—is the heart of the semi-automated system. The computer will prepare and distribute flight plan information to control positions as well as calculate aircraft flight times over predetermined fixes or geographical locations. Eventually, through system refinements, it is expected that the computer will be able to do many other functions. The controller, however, will always retain responsibility for the selection and issuance of all control instructions.

The common digitizers (CD) developed by the FAA and designed and planned to meet FAA/Department of Defense common system requirements, will translate primary radar echoes, as well as secondary radar beacon returns from all aircraft equipped with beacon transponders, into digital messages acceptable by the central computer complex.

This equipment will be used at four remote radar antenna sites serving the Jacksonville control center.

A study at the Agency's Civil Aeromedical Research Institute in Oklahoma City used the above device to detect the deterioration in human performance resulting from the intake of ethyl alcohol.

ALCOHOL + FLYING = A DEADLY COCKTAIL

Alcohol mixes no better with aviation gasoline than it does with the automotive variety. Study of 477 fatal general aviation accidents which occurred during 1963 bore this out.

The National Safety Council's Committee on General Aviation was told that alcohol was a factor in one-third of the 477 accidents which killed 899 people during 1963.

The NSC committee was briefed at the FAA's Civil Aeromedical Research Institute in Oklahoma City. They were told that a pilot can get drunk on only one-fourth the amount of alcohol it takes to make an automobile driver drunk. Flying requires a higher degree of skill and decision making, and the effects of high altitude add to alcohol's intoxicating effects, they were told. Night flying and instrument flying skills are affected first.

FAA's Federal Air Surgeon, Dr. M. S. White, also discussed the effects of alcohol on flying at the FAA shareholders meeting last month *(page 5)*. He warned against drinking even small amounts, particularly, in combination with aspirin or tranquilizers.

Statistics compiled since 1957 with the help of private physicians who serve as FAA Aviation Medical Examiners, have caused FAA to take a close look at the role of alcohol in general aviation accidents.

A pilot recently felt the effects of FAA's close scrutiny. While he was night flying in the vicinity of Tucson, Ariz., an FAA flight service station had trouble in contacting him by radio. He finally reported that he was lost and that he couldn't see his instruments because his panel lights were "not working."

He was guided to an airport by another pilot who found him with the help of radar. After making three attempts, he finally landed his plane but was unable to park it. The obliging pilot who had rescued him parked the plane and found that the instrument lights worked perfectly *when they were turned on.* This incident cost the pilot his license, and a trip to jail to await charges brought by the local sheriff's office after a medical examination confirmed that he was drunk.

For more than 150 pilots who drank while flying during 1963, the penalty was even more stiff. They are dead. Several hundred passengers who were so unfortunate or so foolish as to fly with them died too.

Reports revealed that pilots involved in alcohol related accidents included beginners as well as very experienced pilots. While those with approximately 300 hours or less flying time accounted for the most accidents, not even experienced pilots can compensate for the effects of alcohol, the reports revealed. For instance, an experienced pilot who is used to drinking might think he could get by with one drink by staying at a low altitude, flying only in daylight hours and staying out of emergency situations. The one drink could raise his blood-alcohol percentage as high as .05 per cent, the medical threshold of intoxication. The effects of altitude could put him over the threshold.

A 180-pound man who consumes eight drinks in four hours would reach a blood-alcohol level of .167 per cent. About eight hours would be required for recovery because the body dissipates the alcohol at the rate of only .015 per cent per hour.

NSC members endorsed FAA actions to solve the problem and recommended an education program for pilots and instructors on the serious effects of alcohol and drugs while flying.

One extreme case brought into the discussion indicated that passengers should be included in the education program. It involved a 40 year-old agricultural pilot with 7,000 hours who spent the afternoon drinking and driving around in a car with two male acquaintances and a girl friend. When he suggested a plane ride, his friends agreed to go, even though one of them testified later that he believed the pilot "had too much to drink [even] for driving a car."

The four drove to an airport, secured a single-seat duster plane loaded with several hundred pounds of chemicals. The pilot made a take-off with the girl perched on the ledge behind him dangling her legs. The other two friends sat on the wings with their legs hanging over the leading edge. The plane climbed about 200 feet but crashed outside the airport boundary two minutes after take-off while the pilot attempted a 180 degree turn. There were no injuries except for superficial cuts to the pilot. This was one of the rare cases of drunken flying which didn't end with death.

All of the studies presented at the Oklahoma City conference were careful to point out that the use of alcohol among pilots is very rare when the total general aviation picture is considered.

"The great majority of civil general aviation pilots are mature, dependable individuals who contribute to the high standards of excellence and safety of civil aviation . . ." one spokesman asserted. "It is clear that the alcohol associated group is a very small group, (less than six-tenths of one per cent) but one which exerts an adverse effect on the over-all image of aviation."

Letters

FAA

FAA Aviation News welcomes comments from the aviation community. We will reserve this page for an exchange of views. No anonymous letters will be used, but names will be withheld on request.

• Additional Ratings

I desire to have two additional ratings, rotary wing and instruments, added to my commercial pilot certificate. I am presently on active duty and flying status with the U. S. Army. What procedure should I follow?

Capt. Eugene J. Randall
A.P.O. 205
New York, N.Y.

You may receive an instrument rating on your FAA pilot certificate if you hold a valid and current military instrument rating with no limitations. You may also obtain a rotorcraft category rating with helicopter class rating if, within the 12 months before application, you have had at least 10 hours of flight time as pilot-in-command of military helicopters or have passed an official military check as pilot-in-command of helicopters.

Satisfactory documentary evidence must be supplied to show that you are a rated pilot of an Armed Force on solo status and that you meet the other requirements above. FAA Form 356, "Application for Pilot Certificate or Rating on the Basis of Military Competence," and your current FAA pilot certificate may be presented to any FAA operations inspector who will issue a new pilot certificate with the additional ratings for which you apply and are found qualified.

The Federal Aviation Agency has offices overseas which are prepared to advise and assist military personnel or civilians. Those residing within the United States should contact the nearest FAA General Aviation District Office.

• Military Flight Time

Certain non-rated officers attached to this organization have asked whether the time logged in military aircraft, T-33A, C-47D, and U-3A, may be counted toward requirements for a civilian pilot's license. Could you tell us what your policy is in these cases?

S/Sgt. John R. Staik
Battle Creek, Mich.

The requirements for the issuance of a private pilot certificate are outlined in FAR Part 61 (new). *Section 61.85 (airplane rating: aeronautical experience) provides that an applicant must have had a total of at least 40 hours of flight instruction (from an appropriately rated flight instructor) and solo flight time. Section 61.39 requires the keeping of a reliable record of flight time that is used for meeting the experience requirements for a pilot certificate or rating.*

Non-rated officers who wish to obtain a private pilot certificate with an airplane rating (in addition to meeting other requirements) must log a total of at least 40 hours of solo flight time and instruction time. The solo flight time may be logged only during flight time when the applicant is the sole occupant of the aircraft, military or civilian.

Flight instruction may be logged in a military aircraft but only when given by the holder of an FAA flight instructor certificate with an airplane rating on that certificate, and only if it is given in an airplane with fully functioning dual controls.

FAR Part 61 (new) *can be purchased directly from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, for 30¢.*

• Swinging a Prop

In addition to the precautions listed in the article "Swinging a Prop" (August, 1964 *FAA Aviation News*), I have always been conscious of and have made it a point while instructing students that loose ties, shirts and unbuttoned jackets, etc., must be properly secured before attempting to swing a prop. I was surprised to note in the picture accompanying the article the fellow demonstrating the "art" of propping was wearing a loose shirt that could be easily caught in the spinning prop and thus cause an accident.

The article was a sound one and I encourage you to include more like them in future issues.

William G. Larrabee
Central Square, N.Y.

Your comments are correct. It is a good practice to properly secure any clothing which may become entangled in the propeller.

• Sport Parachuting

My wife opposes the sport of sport parachuting and cannot see why a father and husband would want to participate. I thought I could gain her understanding with a few encouraging words from your Agency.

Name withheld

According to an article that appeared in Time *magazine in July 1963 only 200 Americans had tried sport parachuting in 1957. Information received from the Parachute Club of America indicates that approximately one million jumps were made during 1963.*

Jacques A. Istel, president of Parachutes, Inc., Orange, Mass., released information indicating that in the seven years since the founding of his organization, some 40,000 jumps have been launched, including 4,500 by first-time jumpers. This group has never had a fatality and the student rate of injury is less than two-tenths of one per cent. We consider this an enviable safety record.

Your views are generally shared by many thousands of other sky divers, including the Administrator of the Federal Aviation Agency, N. E. Halaby, who described his parachute jump as "an exhilarating experience."

• Gyroglider

An advertisement for a gyroglider in a mail order catalog tells how it can be converted to a gyrocopter. The advertisement states that dual time is not required for a license to fly a gyrocopter. Is that correct?

William Koch
Chicago

An amendment to Section FAR 61.63 *issued on June 9, 1964, enables a student pilot to solo a single place gyroplane without having any actual in-flight instruction from an FAA certificated flight instructor. However, as specified in the amendment, the student would be permitted to solo only after receiving instruction in ground operating procedures and having been endorsed for solo flight in a gyroplane by an FAA certificated flight instructor who has observed him make at least three take-offs and complete landings in a gyroplane or gyroglider towed by a line attached to a vehicle on the surface.*

The amendment applies only to student pilots.

Applicants for a private pilot certificate (rotorcraft) (FAR 61.68) *must still have had flight instruction from an appropriately rated flight instructor.*

• Synthetic Trainer Time

Could you please give me information on entering synthetic trainer time in a logbook. Specifically, would this time be counted towards total flying time?

L. A. Vance
Hooper, Utah

Synthetic trainer time should be entered separately from all other piloting time. Many pilots reserve and use a separate column in their logbooks for this purpose. Currently, synthetic trainer experience is valid only for 20 of the 40 hours required for an instrument rating, and for three of the six hours of the recent experience required for pilots-in-command of aircraft under instrument flight rules. However, the FAA encourages the logging of all synthetic trainer experience.

Further assistance can be obtained from your local General Aviation District Office.

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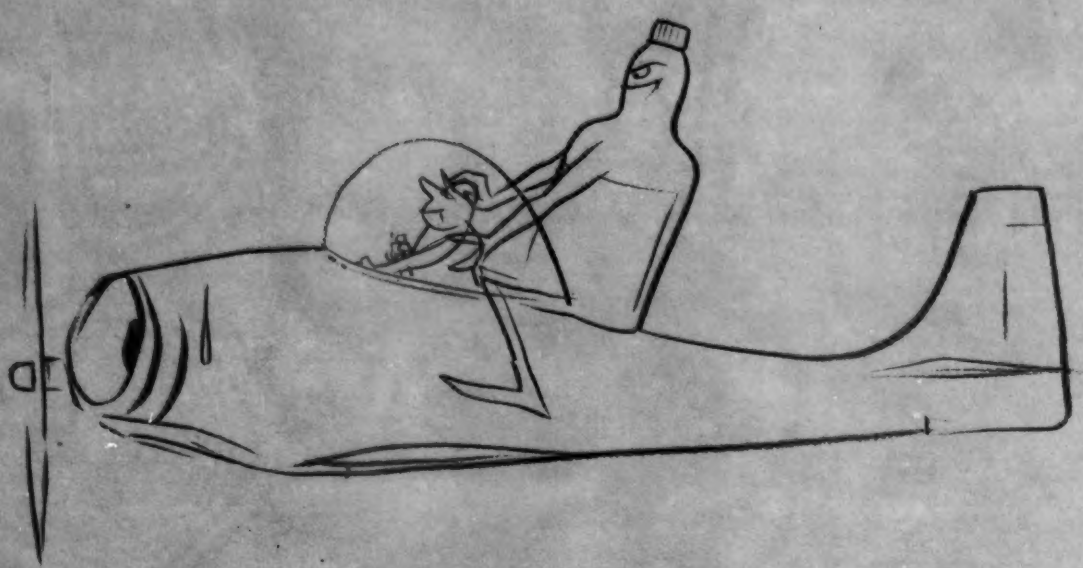
A nip of booze, however slight,



Is one good way to doom your flight.